



**A QUALITATIVE FORCE STRUCTURE ANALYSIS
OF THE GLOBAL MOBILITY TASK FORCE**

GRADUATE RESEARCH PROJECT

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Abbreviations

AEF	Air Expeditionary Force
AFDD	Air Force Doctrine Document
AFSC	Air Force Specialty Code
AFT	Alternative-Focused Thinking
AMC	Air Mobility Command
AME	Air Mobility Element
AMOG	Air Mobility Operations Group
AMOS	Air Mobility Operations Squadron
AMS	Air Mobility Squadron
AOC	Air Operations Center
AOR	Area of Responsibility
ARC	Air Reserve Component
ASETF	Air and Space Expeditionary Task Force
C2	Command and Control
CINC	Commander in Chief
CJTF	Commander, Joint Task Force
COCOM	Combatant Command (command authority)
COMAFFOR	Commander, Air Force Forces
CONOPS	Concept of Operation
CONUS	Continental United States
COP	Common Operational Picture
CRG	Contingency Response Group
CRU	Contingency Response Unit
CSAF	Chief of Staff of the Air Force
DAF	Department of the Air Force
DOD	Department of Defense
DOS	Department of State
DPG	Defense Planning Guidance
DTIC	Defense Technical Information Center
FHA	Foreign Humanitarian Assistance
GMTF	Global Mobility Task Force
GRL	Global Reach Laydown
GRP	Graduate Research Paper
GRST	Global Response Task Force
GSTF	Global Strike Task Force
HLSTF	Homeland Response Task Force
HUMRO	Humanitarian Relief Operation
ISR	Intelligence, Surveillance, and Reconnaissance
JCS	Joint Chiefs of Staff
JFACC	Joint Force Air Component Commander

JFC	Joint Force Commander
JIATF-E	Joint Interagency Task Force East
JOA	Joint Operations Area
JP	Joint Publication
JSOACC	Joint Special Operations Air Component Commander
JSSROC	Joint Southern Surveillance Reconnaissance Operations Center
JTF	Joint Task Force
JV 2010	<i>Joint Vision 2010</i>
MAJCOM	Major Command
METL	Mission Essential Task List
MOG	Maximum on Ground
MOOTW	Military Operations Other Than War
MST	Mission Support Team
NAF	Numbered Air Force
NCA	National Command Authority
NEO	Noncombatant Evacuation Operation
NGO	Non Governmental Organization
NRTF	Nuclear Response Task Force
OCONUS	Outside Continental United States
OSI	Office of Special Investigations
PACAF	Pacific Air Forces
PBA	Predictive Battlespace Awareness
Prime BEEF	Prime Base Engineer Emergency Force
RED HORSE	Rapid Engineer Deployable, Heavy Operations Readiness Squadron, Engineer
S&C4ISRTF	Space and Command, Control, Computers, and Communications Intelligence, Surveillance, and Reconnaissance Task Force
SECAF	Secretary of the Air Force
SECDEF	Secretary of Defense
SOF	Special Operations Forces
TALCE	Tactical Control Airlift Element
USAF	United States Air Force
USCINCCENT	Commander in Chief, United States Central Command
USCINCPAC	Commander in Chief, United States Pacific Command
USCINCTrans	Commander in Chief, United States Transportation Command
USSOUTHCOM	United States Southern Command
USSTRATCOM	United States Strategic Command
USTRANSCOM	United States Transportation Command
VFT	Value-Focused Thinking

Abstract

This paper examines the Global Mobility Task Force construct and the optimum force structure needed to implement this vision. The “United States Air Force Transformation Flight Plan” provides the strategic guidance for the Global Mobility Task Force construct, and in turn, Air Mobility Command is tasked with developing Global Mobility Task Force capabilities. However, differences exist between doctrine and AMC’s force structure plan. These differences and the lack of an operational mission for the mobility Numbered Air Forces are the reason for seeking an optimal force structure.

This paper incorporates and evaluates information obtained through military and civilian publications, theses, briefings, reports, and organizational proprietary data. In particular, Ralph Keeney’s Value-Focused Thinking approach was extensively utilized as the primary methodology for this paper. A qualitative analysis is performed in the course of the Value-Focused Thinking approach to arrive at a best alternative based upon the fundamental objectives of efficiency and effectiveness. The research shows that a force structure based upon the Contingency Response Group has the best potential for achieving success in the near term. This new organization, notionally labeled the Mobility Response Wing, is larger than the Contingency Response Group, and it replaces the two mobility Numbered Air Forces. Another force structure alternative that has potential for the future is an organization that keeps its command staff in a rear area because it can leverage information systems and new technologies. Although not feasible today, this alternative promises even more gains than the Mobility Response Wing.

I. Introduction

Background

The Fiscal Year 03-07 Defense Planning Guidance (DPG) levied a requirement that each Military Department will prepare, and update annually, a transformation roadmap to be reviewed by the Secretary of Defense (DAF, 2002: iv). As a result of that DPG requirement, the Air Force Chief of Staff (CSAF) established a process, designated as the Task Force Concepts of Operation (CONOPS), to determine future requirements for the Air Force (DAF, 2002:iv). The central thought of the Task Force CONOPS is that it “will serve as the focus for transforming our planning, programming, budgeting, requirements, and acquisition processes and describe how the Air Force tailors forces and employs them in a variety of real-world scenarios” (DAF, 2002:iv). Accordingly, “the Task Forces will provide the basis for determining what future capabilities the Air Force needs to carry out its assigned missions in support of the National Security Strategy” (DAF, 2002:iv). In short, it provides a means to allocate funds based upon military capabilities.

Seven Task Force CONOPS were initially selected by the CSAF to determine future requirements for the Air Force. “These Task Force CONOPS are force presentation concepts that describe how the warfighter can use Air and Space Power to counter the strategies and capabilities US forces may encounter in various future scenarios” (DAF, 2002:vii). Specifically, the seven task forces are:

1. Air and Space Expeditionary Forces
2. Space and Command, Control, Computers and Communications Intelligence, Surveillance, and Reconnaissance Task Force (S&C4ISR TF)
3. Global Strike Task Force (GSTF)
4. Global Response Task Force (GRTF)
5. Homeland Security Task Force (HLSTF)
6. Global Mobility Task Force (GMTF)
7. Nuclear Response Task Force (NRTF) (DAF, 2002:vii).

These task forces help identify capabilities across the entire Air Force spectrum and will identify any shortfalls, which may require “improvement, development, and transformation” (DAF, 2002:vii). As the Task Force concept matures, additional task forces may be added (DAF, 2002:vii).

Research for this paper focuses on the Global Mobility Task Force aspect of the Task Force CONOPS, which has a unique aim.

The mission of the Global Mobility Task Force is to organize the capabilities necessary to provide rapid and effective air mobility support to theater combatant commanders during contingencies. GMTF partners with all the other Task Force CONOPS to cover the full spectrum of operations, from global strike, to Humanitarian Relief Operations/Non-Combatant Evacuation Operations (HUMRO/NEO). (DAF, 2002:vii)

It is important to note that the GMTF is not a standing task force. Rather, the objective is to grab the particular forces from throughout the Air Force to meet the “particular scenarios requiring specific responses and capabilities” (DAF, 2002:13).

Problem Statement

Air Force Doctrine Document 1 states that the Numbered Air Force (NAF) is the senior warfighting echelon of the Air Force (AFDD 1, 1997:69). However, mobility

NAFs do not have a wartime mission, but rather their mission is one of peacetime readiness assessors (Cooper, 2002). Air Mobility Command (AMC), the parent major command, has chosen to not employ its two Numbered Air Forces, Fifteenth Air Force and Twenty First Air Force, in a warfighting role with the GMTF. Instead, Air Mobility Command is planning to source forces for the GMTF from two Continental United States (CONUS) Air Mobility Operations Groups (AMOGs), the 820th Security Forces Group, and various Rapid Engineer Deployable, Heavy Operations Readiness Squadron Engineer (RED HORSE) units (AMC/DOX, 2002; Brady, 2002).

The discrepancy between AMC's sourcing plan for the GMTF and current Air Force doctrine provides the impetus for examining the GMTF structure. Therefore, the primary aim of this Graduate Research Paper (GRP) is to find the best manner to organize forces for the GMTF. In addition, two secondary research issues are addressed. The first issue is to recommend NAF role, mission, and functional structure in light of the Global Mobility Task Force construct, and the second examines the potential for force consolidation due to the proposed organizational structure discovered in the course of this research.

Scope

This research is not intended to replace the judgment of Air Mobility Command's senior leaders, but rather, provide insight on a complex decision regarding force structure. Even though this research deals with AMC's GMTF force allocation problem, the methodology utilized in this research can be applied to a variety of force allocation decision situations.

This research makes several assumptions. First, it is assumed that changes can be made to the force structure segment of the GMTF construct. Air Mobility Command, a subcomponent of U.S. Transportation Command (USTRANSCOM), is charged with devising a force structure plan. The CSAF has the authority to organize, train, and equip forces for combatant commanders like USTRANSCOM, and thus directly influences the structure of organizations. Therefore, the recommendations of this study are not bound by the CSAF's direction to AMC. Second, with any change in force structure, there are costs associated with the reorganization or realignment of forces. Determining numerical cost values are beyond the scope of this research. However, relative cost comparisons can be made for the purpose of evaluating alternatives when the cost structure is relatively known. Third, all units in consideration for the optimal organizational structure are assumed fully trained and equipped. This may not be the actual case. Time, funds, and personnel are required to bring a unit up to fully operational status if not postured to support the GMTF mission. Fourth, active, Guard, and Reserve components are assumed to be integrated into the force structures presented in this paper. In essence, there is no change from current policy and procedures for Air Reserve Component integration. Finally, there are no political constraints. Reorganizing forces can incur some resistance on the political front due to the potential for moving units as a result of a reorganization. Members of Congress are concerned about their constituents, and moving forces out of a district directly impacts that Congressional member's power base. This research assumes an ideal situation where forces can be moved as required to a new organizational structure or location without any political interference.

Overview of Paper

This chapter presented background information on the Task Force CONOPS and the Global Mobility Task Force. The Global Mobility Task Force will play a key role in future operations, and it also presents a way to justify funding based on a known capability. This chapter also presented the reason for this research paper: a difference in thought between AMC's force structure plan and doctrine. The remaining chapters of this paper support the research objective of an optimal force structure concept. To accomplish that goal, Chapter II reviews literature related to organizational structure while Chapter III provides the methodology utilized in the course of this research paper. Notably, the concept of Value-Focused Thinking is introduced in Chapter III. Chapter IV, Results and Analysis, presents organizational guidance from doctrine and employs Ralph Keeney's Value-Focused Thinking model to arrive at an organizational concept. Chapter V amplifies and explains the results from Chapter IV, draws conclusions, and recommends areas for further study.

II. Literature Review

This research incorporates and evaluates information obtained through military and civilian publications, theses, briefings, reports, and organizational proprietary data.

Primary sources of information for this paper include, but are not limited to:

- Air Mobility Command (AMC)
- Defense Technical Information Center (DTIC)
- Numbered Air Forces (NAFs)

The survey of literature starts with doctrine, which provides the foundation for examining the Global Mobility Task Force construct. Doctrine furnishes guiding principles drawn from lessons learned through conflicts, experiences, and operational missions. It is important to note that doctrine is authoritative but not directive (AFDD 1, 1997:v). Thus, when considering any course of action, doctrine should be consulted to provide a framework from which to base decisions (AFDD 1, 1997:v). Studies that build upon the doctrine framework concerning the organization of forces are also examined because doctrine alone does not provide enough guidance to develop an organizational structure to carry out the GMTF mission. Recent guidance from the Department of the Air Force and Air Mobility Command is reviewed because it directly shapes the context of the decision problem. Details furnished from other sources also add to the recent body of knowledge concerning the GMTF. This chapter also presents combat and mobility Numbered Air Force structures to provide a basis from which to compare and contrast organizational practices and responsibilities. Standing Air Force organizational units and the identification of their capabilities assists in developing a list of alternative structures

from which to evaluate and recommend an optimum GMTF organization. The review concludes with an examination of Value-Focused Thinking, which will provide the primary methodology for this research.

Doctrine

Doctrine provides a framework for forces to fight as a joint team (AFDD 1, 1997:v; AFDD 2, 2000:vii; JP 3-0, 2001:1; JP 3-07.5, 1997:1; JP 3-07.6, 2001:1). The doctrinal framework prescribes training, operational structures, and planning guidance under the authority of combatant commanders and joint force commanders (JFCs) (AFDD 1, 1997:v; JP 3-0, 2001:1; JP 3-07.5, 1997:1; JP 3-07.6, 2001:1). In organizing forces, combatant commanders and joint force commanders utilize certain principles in organizing for a successful outcome (AFDD 1, 1997:11-35; AFDD 2, 2002:33-69; AFDD 2-6.3, 1999:Ch 1; JP 3-0, 2001:x to Ch II). These principles are founded in historical examples of successful campaigns, and utilizing history as an underpinning provides a baseline template for the presentation of forces (AFDD 2, 2000:36-46; JP 3-0, 2001:II-15 to II-18). In addition to a baseline organizational structure, specific doctrine is published to address the presentation of forces in Noncombatant Evacuation Operations (NEO) and Foreign Humanitarian Assistance Operations (HUMRO) (AFDD 2, 2000:13-15; JP 3-07.5, 1997:title page; JP 3-07.6, 2001:title page). Knowing how to organize is only one aspect of the equation: specific responsibilities in functional areas and the tasks necessary to carry them out provide a more comprehensive picture (AFDD 1-1, 1998:i; AFDD 2, 2000: Ch 4; AFDD 2-6.3, 1999:Ch 2 to Ch 3).

Department of Defense (DOD) Organizational Framework

The Goldwater-Nichols Defense Reorganization Act of 1986 clarified the chain of command from the President to the combatant commanders, framed the organization of the Department of Defense, and further codified responsibilities given to those affected by the Act (Chesnut, 1997:31). When the next round of defense reorganization occurs, a combination of rationalizing staff to structure and promoting the regionalization of command in an interagency setting should be considered (Chesnut, 1997:51). In contrast to the view of Chesnut, Walker contends, “the correct organizational structure is one that allows our forces to accomplish the mission in a particular situation” (Walker, 1996:7).

Past actual experiences in military operations highlight how Joint Task Forces (JTF) have been organized to accomplish the mission (Walker, 1996:11-22). One component of the JTF is the Joint Force Air Component Commander (JFACC). The JFACC construct has some weaknesses such as adding bureaucracy, doctrinal mismatches, and manpower intensity (Morgan, 1999:5). However, leveraging information technology through automation and networking could address JFACC construct weaknesses (Morgan, 1999:16).

GMTF Strategic Guidance

Various factors have driven the need to organize around a capabilities based force (AMC/DOX, 2002; DAF, 2002:2-5; Deptula, 2001; Jumper, 2001). Seven task force CONOPS resulted from the capabilities initiative, with the GMTF CONOPS being one of the seven (DAF, 2002:vii). GMTF capabilities required to execute the CONOPS run the gamut from an enabler for other CONOPS, to conducting over-the-horizon secure communications in a hostile electronic environment (AMC/DOX, 2002; Brady, 2002;

DAF, 2002:D-2 to D-4). A GMTF base opening vision, which illustrates a notional base opening sequence, complements and summarizes the numerous GMTF capabilities (AMC/DOX, 2002; Brady, 2002; Handy, 2002). Personnel will be sourced to support the GMTF from the Air Expeditionary Force, an existing deployment construct that schedules units and provides on-call units to support contingencies (Jumper, 2001).

Air Mobility Command is tasked with developing the GMTF construct for the Air Force (AF/XOX, 2002). As such, it is on the leading edge of developing GMTF guidance. The GMTF mission is to respond quickly and globally to humanitarian type operations and to act as a key enabler for the other task force CONOPS (AMC/DOX, 2002; Brady, 2002; DAF, 2002:vii; Handy, 2002). Units involved in the GMTF include the Air Mobility Operations Group, the 820 Security Forces Group, and RED HORSE units (AMC/DOX, 2002; Brady, 2002). Each of these particular units brings with it certain capabilities that make up the bigger picture of the GMTF (AMC/DOX, 2002; Brady, 2002). Exercises are planned in the near future to test the CONOPS and the units responsible for the GMTF mission (AMC/DOX, 2002; Handy, 2002). Despite the momentum gained, there are some challenges and issues that remain before GMTF becomes a reality (AMC/DOX, 2002; Brady, 2002).

Numbered Air Force Organizational Structures

Two combat Numbered Air Forces and one mobility Numbered Air Force have unit manning documents and organizational charts that identify how they are organized (8 AF, 2002a; 8 AF, 2002b; 12 AF, 2002a; 12 AF, 2002b; 15 AF, 2002a; 15 AF, 2002b). Understanding how the NAFs organize in peacetime and wartime are illustrative in designing functional structure alternatives for the GMTF. In the past, concerns have been

raised about how many NAFs are needed by Air Combat Command to support its warfighting requirements (Hanser and others, 2000:vi). Furthermore, a personnel authorization cap limits the number of personnel to 99 for each NAF, providing unique challenges from where to source forces for wartime missions (Hanser and others, 2000:v).

Numbered Air Forces play a pivotal role in accomplishing operations in a specific region or theater of operations, but not all NAFs have a wartime mission. Furthermore, responsibilities vary based on the type of NAF (Roloff, 2002:4). To better illustrate combat and mobility NAF differences, Table 1 summarizes the responsibilities for selected NAFs.

Table 1. Summary of Selected NAF Responsibilities

Numbered Air Force	Type	Mission
8th Air Force Barksdale AFB Louisiana	Combat	Lead NAF for integration of information operations; Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR); and global strike capabilities. USSTRATCOM AF component for nuclear and computer network operations. Trains Combined Air and Space Operations Center personnel for worldwide deployment. Provides combat-ready forces to combatant commanders. Commands 10 expeditionary wings.
12th Air Force Davis Monthan AFB Arizona	Combat	12 AF interface to USSOUTHCOM's Joint Interagency Task Force East (JIATF-E), JTF-110 and Joint Southern Surveillance Reconnaissance Operations Center (JSSROC). Integrates allocated Air Force assets to support counterdrug operations. Operates USSOUTHCOM's Joint Search and Rescue Center and is responsible for personnel recovery, air-mission monitoring, and threat warning to U.S. aircraft in the AOR.
15th Air Force Travis AFB California	Mobility	15 AF provides operational command and support to half the airlift and air refueling capability of AMC. Ensures readiness of approximately 36,356 personnel and 344 aircraft in units located from the Mississippi River westward to the east coast of Africa. Conducts readiness assessments to verify that six subordinate wings and three direct reporting air mobility groups can perform nuclear and conventional taskings.

(Cooper, 2002; Johnson, 2003; Lingrel, 2003)

Organizational Units and Capabilities

Air Mobility Command has identified particular units, such as the 820th Security Forces Group, to comprise the Global Mobility Task Force construct (AMC/DOX, 2002; Brady, 2002). Other units exist in the Air Force, which provide nearly identical capabilities to those units already identified by Air Mobility Command for the GMTF. Furthermore, the mobility NAFs have capabilities that can be utilized if postured according to doctrine. Understanding the capabilities of each unit is vital to evaluating alternatives and assisting with determining an optimal fit for the GMTF construct. Two options are available in sourcing units for evaluation: existing units or a generated list of new organizations. Table 2 summarizes some existing Air Force units and their capabilities, which could be employed to support the GMTF.

Value-Focused Thinking

Value-Focused Thinking (VFT) provides structure and guidance to develop good decisions. Utilizing a structured approach identifies sources of uncertainty in a systematic way, thereby providing a framework to handle multiple and sometimes conflicting objectives (Clark, 2001:2-34). The advantage of VFT over other methods, termed by Keeney as Alternative-Focused Thinking (AFT), is that VFT utilizes a proactive approach to decision making, which leads to more desirable consequences (Keeney, 1992:3; Keeney, 1994:33). Keeney's approach is to use a five-step model (Figure 1) for decision opportunities in which strategic objectives have been specified. These steps are to specify values, create a decision opportunity, create alternatives, evaluate alternatives, and select an alternative (Keeney, 1992:49). By utilizing these steps, deep thinking uncovers subconscious values that otherwise would have remained

Table 2. Existing Air Force Units and Associated Capabilities

Unit	Capabilities
Air Mobility Operations Group	The AMOG consists of an air mobility operations squadron (AMOS) and three air mobility squadrons (AMSs). These squadrons consist of personnel with operations and support Air Force specialty codes (AFSCs) who reside in-garrison within the AMOGs. The AMOGs report directly to their numbered air forces (NAFs). One of the most important components of AMC's Global Reach Laydown (GRL) concept is the AMOG's in-garrison capability, consisting of cross-functionally trained elements with the primary mission responsibility of providing command and control (C2) and mission support. These elements train in-garrison, and deploy as self-sufficient units capable of sustained operations up to 30 days without base operations support. Deployable elements resident in an AMOG consist of: air mobility elements (AME), which are provided by the AMOS, TALCEs, which are provided by the AMS, and mission support teams (MST), also provided by the AMS.
Air Mobility Squadron (AMS)	The AMS provides the cross-functional core of operations and operations support capabilities for air mobility operations at a deployed location. The core capabilities provided by the AMS are the TALCEs and MSTs.
Tanker Airlift Control Element (TALCE)	Capabilities provided by the TALCE include: command and control, aerial port passenger and cargo processing, aircraft servicing, and aircraft maintenance. Essentially, the TALCE provides a capability to support AMC's GRL strategy similar to AMC's permanent en route location AMS's. For planning purposes, a TALCE would normally be sourced for air-mobility operations at a deployed location where the throughput of AMC aircraft would not exceed a maximum on the ground (MOG) of 12 parked aircraft.
Mission Support Team (MST)	Capabilities provided by the MST are similar to a TALCE, but based on less air mobility throughput. Use of a MST would normally be based on a MOG of 4 parked aircraft.
820th Security Forces Group	The 820th Security Forces Group provides a highly-trained, rapidly-deployable "first-in" force protection capability to any operating location in support of the USAF Global Engagement mission. The 820th gives the Air Force a totally dedicated composite unit for force protection, drawing from many disciplines, not just security forces. The unit is composed of personnel from security forces, Office of Special Investigations, civil engineering, logistics and supply, communications, intelligence, administration, personnel, and medical career fields, providing the capability to assess each threat and act accordingly.
RED HORSE	These units are wartime-structured to provide a heavy engineer capability. They have a responsibility across the area of operations, are not tied to a specific base, and not responsible for base operation and maintenance. These units are mobile, rapidly deployable, and largely self-sufficient, for limited periods of time. The five core tasks identified by the RED HORSE Mission Essential Task List (METL) are as follows: heavy construction operations (horizontal and vertical), provide bare base development (beddown, utilities, and water production), batch plant and quarry operations (explosive and mechanical aggregate production), asphalt and concrete batch plant operations, and base denial (explosive and non-explosive).
Numbered Air Force (NAF)	The NAF is the senior warfighting echelon of the US Air Force. A NAF conducts operations with assigned and attached forces under a command element. An Air and Space Expeditionary Task Force (ASETf) or in-place NAF provides the Joint Force Commander (JFC) with air and space capabilities in a task-organized, tailored package. This force can be sized to the level of conflict and the desired political and military objectives. The command element always includes the Commander of Air Force Forces (COMAFFOR), a staff, and a command and control function.
Contingency Response Group (CRG)	The unit will possess or be augmented with capabilities in the following Air Force specialties; security forces, intelligence, airfield operations, civil engineer, Office of Special Investigations (OSI), logistics plans, fuels, contracting, finance, communications, transportation, supply, maintenance, information management, command post, personnel, services and medical personnel. The CRG can tailor mission packages to meet specific contingency needs or deploy as a unit.

(613 CRG CONOPS, 2003:5; AFDD 2, 2000:34; AFDD 2-6.3, 1999:14-18; AFDD 2-4, 1999:37; Clark, 2001:Sec 2, 6; Defender, 2003)

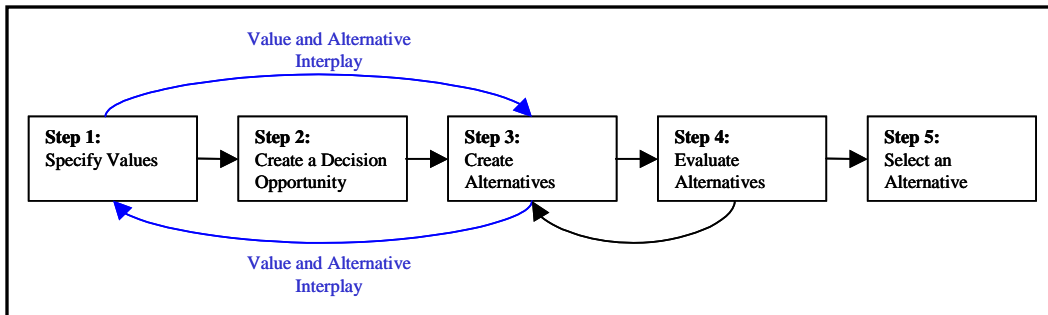


Figure 1. Five Major Activities for VFT
(Keeney, 1992:49)

hidden. Conceptually, VFT's central role in decision making is detailed in Figure 2. Values interact with each area to provide advantages not normally found in the AFT approach. Therefore, VFT is an appealing model from which to approach decision problems because it takes into consideration what the decision maker considers important.

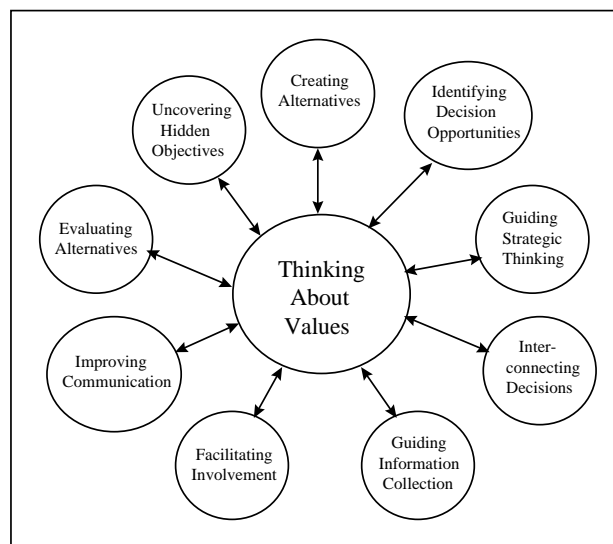


Figure 2. Central Role of Value-Focused Thinking
(Keeney, 1992:24)

Robert Clemen in his book *Making Hard Decisions* also advocates a Value-Focused Thinking approach when structuring decisions, but he utilizes the Value-Focused Thinking approach as part of a three-step decision model (Clemen, 1996:41-42). The first step is to identify and structure the values and objectives utilizing Keeney's VFT methodology. Then the next step is to structure these elements in a logical framework. Finally, all decision elements are refined and precisely defined (Clemen, 1996:41). These steps are combined to produce a product that leads to better decisions.

Summary

This chapter presented the research material utilized throughout the course of this paper. Doctrine was introduced as a body of expert knowledge upon which to base decisions. Other sources were discussed that provide additional data points for use in determining force structures, particularly organizational units and their associated capabilities. Finally, an overview of Value-Focused Thinking was presented which forms the primary methodology of this research paper. The next chapter presents the approach for utilizing doctrine and Value-Focused Thinking to arrive at an optimal force structure concept.

III. Methodology

Framework

The approach of this research is to first provide a background and framework for understanding the situation faced by today's leaders. To accomplish that end, the Goldwater-Nichols Defense Reorganization Act of 1986 is consulted to provide a broad overview because it sets forth the basic organizational structure of the armed forces. Current joint and Air Force doctrine regarding Joint Task Force structures is then examined, which provides an underpinning for examining and evaluating the Global Mobility Task Force CONOPS.

With an awareness of doctrine established, this research explores current GMTF guidance to more narrowly focus the decision situation. In particular, Task Force CONOPS guidance in *The USAF Transformation Flight Plan* outlines strategic thoughts and requirements for the GMTF. The strategic requirements set the boundaries, or in VFT terms, the strategic decision frame.

The strategic decision frame (Figure 3) is the broadest decision context facing any decision maker, whether individual or organizational (Keeney, 1992:40). The decision

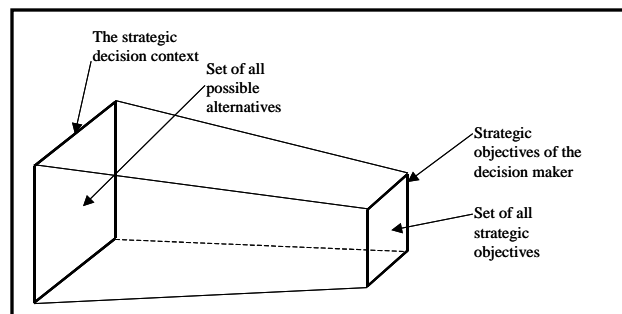


Figure 3. Strategic Decision Frame
(Keeney, 1992:41)

context in the left part of Figure 3 defines the set of alternatives appropriate to consider. Since the alternatives are strategic, they are much more diverse than the alternatives to be considered in the case of the GMTF structure decision. The strategic objectives, which make explicit the values that one cares about, are very broad. What results from defining the alternatives and objectives is called the decision frame indicated by the tapering box in Figure 3 (Keeney, 1992:30).

The strategic decision frame then sets up a more limited decision situation, which is the crux of the GMTF force structure decision situation, or more precisely, the objective of this research (Figure 4). The more limited decision situation is shown as the smaller frame inside the strategic frame, indicating that it is a subset of the larger decision situation. It is important to note that there can be more than one decision frame that is

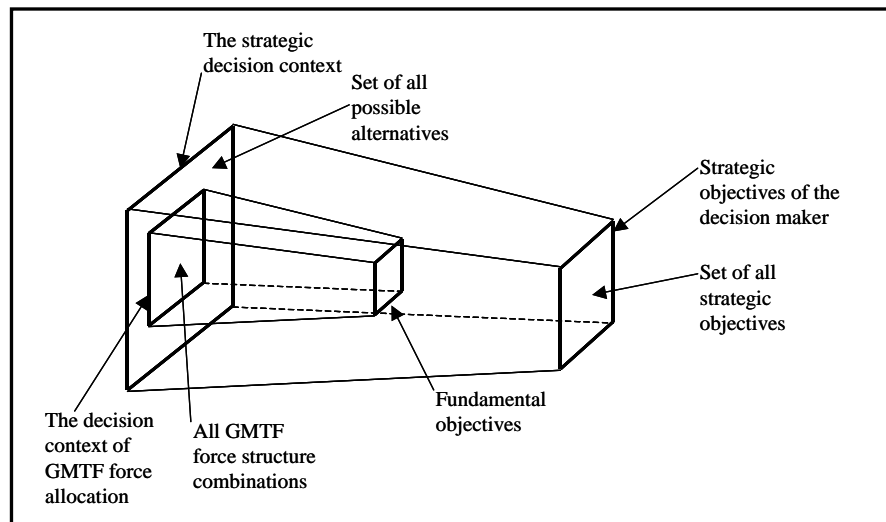


Figure 4. Decision Frame for GMTF Force Structure
(Keeney, 1992:43)

a subset of the strategic decision frame. Thus, there can be multiple objectives for a given decision opportunity, which may or may not overlap.

Specifying Values

The primary methodology employed by this research is the Value-Focused Thinking approach introduced in Chapter II, and in particular, the simplified steps illustrated in Figure 1. The approach begins by specifying values (Figure 5). The reason for specifying values is “values made explicit in consideration of a decision problem stimulate the thought necessary to identify a decision opportunity” (Keeney, 1992:50). Many values should be explored qualitatively and then potentially quantified based

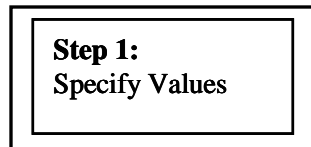


Figure 5. VFT Step 1
(Keeney, 1992:49)

upon the decision maker’s needs (Keeney, 1992:50). If values are quantified, they can then be used in step three of the process of creating alternatives. It is important to note that quantification of values is not a mandatory condition of the model, but rather an approach to facilitate the range of alternatives available (Keeney, 1992:99). This research utilizes a qualitative method throughout the VFT approach; however, doctrine does provide some rigor with regard to the evaluation of alternatives in step four.

In order to make values explicit, objectives are identified. An objective is “a statement of something that one desires to achieve” (Keeney, 1992:34), and is “characterized by three features: a decision context, an object, and a direction of preference” (Keeney, 1992:34). For example, with regard to manufacturing airplanes,

one objective may be to minimize cost. The decision context is manufacturing airplanes, the objective is cost, and the direction of preference is less cost is better than more cost.

The process of identifying objectives is vital to illuminating the values that underlie the decision situation. Keeney suggests ten ways to identify objectives, such as using a wish list or articulating consequences (1992:57). This research used these devices to identify objectives for the GMTF force structure decision, particularly the devices of goals, constraints, and guidelines.

Any proposed list of objectives will contain both means objectives and fundamental objectives, and it is important to separate these two types because the decision maker is concerned with fundamental objectives for the decision situation (Keeney, 1992:65). Keeney defines a fundamental objective as “an essential reason for interest in the decision situation” (1992:34). “A means objective is of interest in the decision context because of its implications for the degree to which another (more fundamental) objective can be achieved” (Keeney, 1992:34). Once the fundamental objectives are identified, structuring the objectives clarifies the decision context and defines the set of fundamental objectives (Keeney, 1992:69).

Structuring is accomplished by either of two methods: an objectives hierarchy or an objectives network (Keeney, 1992:77). This research uses the objective hierarchy to define the qualities that are used for evaluation, and the objective hierarchy can be created top down or bottom up depending on the preference of the decision maker (Keeney, 1992:79). Multiple fundamental objective hierarchies can also be created if the decision situation warrants. As a rule, “[f]undamental objectives should be as useful as

possible for creating and evaluating alternatives, identifying decision opportunities, and guiding the entire decision making process” (Keeney, 1992:82).

Creating a Decision Opportunity

The next step in the VFT approach is to create a decision opportunity (Figure 6). Keeney (1992:8) distinguishes a decision opportunity from a decision problem by stating a decision opportunity is an occasion to create alternatives. This paradigm shift from problem to opportunity allows the decision maker to become proactive (Keeney, 1992:47). In the case of this research, the decision opportunity is to methodically examine the force composition for the GMTF.

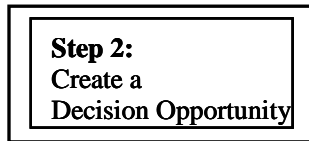


Figure 6. VFT Step 2
(Keeney, 1992:49)

Creating Alternatives

With the decision opportunity determined, alternatives are created to achieve the specified values. Keeney notes “[t]here may be significant interplay between the identification and structuring of values and the creation of alternatives” as previously shown in Figure 1. In other words, this process may be iterative. The decision maker at some point will stop the iteration process and then move on to evaluating and selecting

alternatives (Keeney, 1992:51). The stopping point is primarily determined by the decision maker's personal satisfaction with the quality and number alternatives created.

Alternatives are generated by several methods. Keeney suggests that "[t]he initial thinking should focus on values to identify and structure objectives, to specify attributes to measure the degree to which the objectives are achieved, and to assess a composite objective function (that is, a utility function or a measurable value function)" (1992:198). The specific techniques recommended by Keeney to create alternatives are shown in Table 3, and these techniques are utilized in the course of this research. Moreover, combat and mobility Numbered Air Force structures are compared and contrasted in the course of the last technique: alternatives for a series of similar decisions. The overall objective is to create a representative list of alternatives for the next two steps in the VFT process.

Table 3. Techniques for Creating Alternatives

1	Counteracting cognitive basics
2	Use of objectives
3	Use of strategic objectives
4	Focus on high value alternatives
5	Use of evaluated alternatives
6	Generic alternatives
7	Coordinated alternatives
8	Process alternatives
9	Removing constraints
10	Better utilization of resources
11	Screening to identify good alternatives
12	Alternatives for a series of similar decisions

(Keeney,1992:199-225)

Evaluation and Selection of Alternatives

Evaluation and selection of alternatives follow next. Each alternative approach proposes an organizational concept, and evaluation is conducted by qualitatively comparing the results of the previous step against the list of values generated in step one of the VFT process. Doctrine, which serves as an expert body of knowledge, will assist in guiding the evaluation and selection. The goal is to arrive at a best fit for the GMTF and the Task Force CONOPS.

Of particular importance during the evaluation phase, Keeney notes insights may be gained from the evaluation that may lead to the creation of other alternatives (1992:275). These alternatives should also be explored and evaluated. However, the evaluation process is typically concluded after the first iteration of evaluation and selection (Keeney, 1992:51).

There are two secondary research objectives in conjunction with the overall goal of a proposed organizational concept. The first objective is to determine a role and mission for the mobility NAF. With the selection of an organizational concept to carry out the GMTF, new light may be shed in the course of the VFT analysis. The second area is to examine the potential for consolidation of forces. The VFT process may identify areas for consolidating forces as a result of the proposed structure, which could save manpower and funds.

Summary

This chapter laid the foundation and approach for this research paper. Doctrine and other guidance provide the basic organizational framework from which Keeney's

VFT five-step methodology is employed. The next chapter presents the results from utilizing the methodology outlined in this chapter, and through analysis, preliminary conclusions are drawn.

IV. Results and Analysis

Framework

The Goldwater-Nichols Defense Reorganization Act of 1986 along with both joint doctrine and service doctrine, presents a framework on the organization of forces. The Goldwater-Nichols Defense Reorganization Act of 1986 established two distinct command chains that branch out from the Secretary of Defense (SECDEF). “The first chain involved “support” of the armed forces, and it ran from the SECDEF through the service secretaries to the individual services. The second “operational” chain ran from the SECDEF *through* (implying transmission only) the Chairman of the JCS [Joint Chiefs of Staff] to the unified CINCs” (Chesnut, 1997:12). Of note, the term CINC is no longer used to denote a military combatant commander: this term is reserved for the President of the United States. Figure 7 illustrates the two-branch command chain concept.

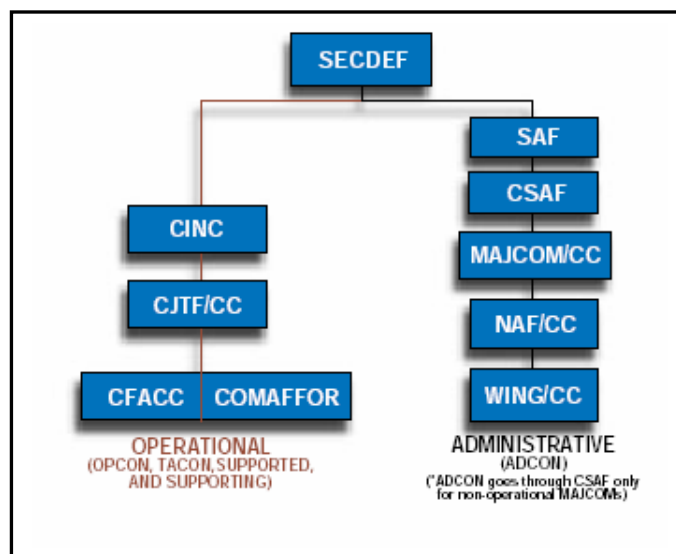


Figure 7. Single Chain of Command with Two Branches
(AFDD 1, 1997:63)

The branches originating from the SECDEF are organized along two different lines of responsibilities: operations and administration. The operational branch is responsible for direction of forces assigned to a combatant command (JP 3-0, 2001:II-5). United States Central Command, a combatant command for Southwst Asia, is an example of a warfighter that directs forces. The administrative chain, on the other hand, is used for purposes other than operational direction of forces (JP 3-0, 2001:II-5). Other purposes would include organizing, training, equipping, and providing forces to the combatant commander (JP 3-0, 2001:II-5). The two branches coordinate continuously due to their symbiotic relationship. For instance, the operational branch has a direct stake in how those forces are trained and equipped, an administrative function, because of their employment in various operations across the globe. Thus, the two branches depend upon each other for a capable and ready force to meet a wide spectrum of threats and contingencies.

The GMTF is tasked to support a wide array of operations. In order to meet those obligations, the GMTF is directed through the operational branch while being trained and equipped through the administrative branch. This point is important because it illustrates who is responsible for directing the forces and who is responsible for ensuring those forces are mission ready. In most cases it will be two different individuals at the four star level, and this may lead to disagreements in the employment of those forces. In order to thoroughly understand the relationship between the two branches and the framework of the decision context for the GMTF organizational issue, a further look into various aspects of the two branches is required. The first discussion will explore the operational branch.

One concept from doctrine important to the GMTF is the Commander of Air Force Forces (COMAFFOR). Air Force Doctrine Document 2 states that:

For each joint operation, the operational and administrative responsibilities and authorities of the COMAFFOR are established through the operational and administrative chains of command, respectively. The operational chain of command flows from the NCA through the commander of a combatant command (CINC) and, if established, subordinate joint force commander, to the COMAFFOR. The Service administrative chain of command flows from the NCA through the Secretary of the Air Force (SECAF), Chief of Staff of the Air Force (CSAF), MAJCOM, and NAF commanders.

In any operation, a COMAFFOR is designated from the US Air Force and serves as the commander of US Air Force forces assigned and attached to the US Air Force component. US Air Force elements deployed in an expeditionary role are designated as an Aerospace Expeditionary Task Force (ASETF). The COMAFFOR, with the ASETF, presents the JFC a task-organized, integrated package with the proper balance of force, sustainment, and force protection elements.

The Secretary of Defense (SecDef) assigns at least one COMAFFOR to each CINC by issuing the "Forces for Unified Commands" memorandum. For example, the Commander in Chief, US Pacific Command's (USCINCPAC's) COMAFFOR is the Commander, Pacific Air Forces (PACAF). A NAF commander within a MAJCOM assigned to one CINC may serve as the COMAFFOR for another regional CINC. For example, the Ninth Air Force (9 AF) commander acts as COMAFFOR to the Commander in Chief, US Central Command (USCINCCENT). Similarly, the PACAF commander has delegated some authorities to the Seventh Air Force (7 AF) commander who acts as the COMAFFOR to the United States Forces Korea commander. (AFDD 2, 2000:33-34)

Two important points arise from the above Air Force Doctrine Document 2 excerpt. First, it is the COMAFFOR's responsibility to present the Joint Force Commander a balanced and appropriately sized force to carry out the mission. The mission could be offensive operations or it could be a humanitarian operation. Whatever the case, it is up to the COMAFFOR to ensure that the Air Force portion is composed of the correct specialties to guarantee mission success. Second, the role of some NAF commanders is to serve as the COMAFFOR. Not all NAF commanders serve as the

COMAFFOR, as in the case of the mobility NAFs. These two points add to the decision context of the GMTF organizational issue. Another aspect that has implications for GMTF is the Aerospace Expeditionary Task Force (ASETF).

The ASETF is the designated US Air Force organization to fulfill the JTF and JFACC campaign objectives. An ASETF encompasses all US Air Force forces assigned or attached to the JTF and includes other forces dedicated to the JTF mission provided via reachback. It provides the JFACC with a single point of contact for US Air Force aerospace force capabilities in a scalable, task-organized, tailored package. Where appropriate, the functions of an ASETF can be accomplished by an in-place NAF. The ASETF can be sized depending on the level of conflict and the desired political and military objectives. The command element includes the ASETF commander (the COMAFFOR), a staff, and a command and control function. Like the force itself, the command element is tailored to the unit(s) and mission. (AFDD 2, 2000:34)

The takeaway from this quote is the sizing flexibility for an ASETF. Also of note is a hint of the organizational structure, which includes the COMAFFOR, staff, and a command and control function. These two aspects lend some guidance with regard to a deployable force and indicate a possible force structure for the GMTF. A further clarification of the Numbered Air Force role from doctrine provides another data point for the decision context. Air Force Doctrine Document 2 presents the following explanation of the Numbered Air Force role in an ASETF:

The NAF is the senior war-fighting echelon of the US Air Force. War-fighting NAFs conduct theater aerospace operations with assigned and attached forces through the aerospace operations center (AOC) and train to perform this role as an integral C2 element. Not all NAFs maintain this capability. A NAF conducts operations with assigned and attached forces under a command element. When participating in a joint operation, the tasked NAF(s) will present US Air Force forces to the JFC within the framework of an ASETF. When an in-place NAF is tasked to support a JFC, the framework will be the same as an ASETF, but the in-place NAF will retain its NAF designation (e.g., 7 AF). The tasked NAF, for geographic combatant commands, and the COMAFFOR will be designated by the tasked US Air Force component command.

When a CINC forms a JTF that includes US Air Force forces, the associated MAJCOM will form an ASETF or task an in-place NAF to provide the command framework for all assigned/attached US Air Force forces. The ASETF commander or NAF commander will act as the COMAFFOR. The COMAFFOR may be a colonel to major general for an ASETF that is subordinate to a NAF; if the NAF itself is tasked, the NAF commander will be the COMAFFOR. The COMAFFOR should normally be designated at a command level above the operating forces and should not be dual-hatted as commander of one of the subordinate operating units (e.g., wing commander or group commander). (AFDD 2, 2000:34-36)

Implied in this statement from doctrine is the thought that only war-fighting NAFs have a mission to accomplish in wartime or a contingency. This point is confirmed when mission statements from combat and mobility NAFs are compared from Table 1. For example, Twelfth Air Force has a mission to support counterdrug operations, which is an ongoing operational mission for that NAF (Lingrel, 2003). Another point raised in the AFDD 2 excerpt is the notion of organizational structure. Combat NAFs maintain a certain inherent organizational capability for wartime operations, which is restricted due to a manning limit of 99 personnel (Hanser and others, 2000:v). Consequently, the NAF must augment its staff from other sources in order to perform its assigned mission.

The presentation of Air Force forces to the joint force commander is useful background knowledge in understanding how the Air Force organizes forces to support SECDEF and combatant commander for contingencies. However, a doctrinal discussion of this topic is beyond the scope of this paper, but the reader can find more information on pages 36-46 from Air Force Doctrine Document 2. The relevant issue regarding the presentation of forces revolves around the organization of subordinate units and the command staff organization, which is already articulated in the above analysis.

The other branch emanating from the SECDEF is the administrative branch (Figure 7). In this branch, the Air Force organizes, trains, and equips air forces through its MAJCOMs (JP 3-0, 2001:II-5). Those forces are provided to combatant commands (unified commands) for employment in operations (AFDD 1, 1997:62). MAJCOMs are organized based upon combat, mobility, space, and special operations type operations, plus the materiel support required for these operations. The Air Force then organizes those forces under the MAJCOM into numbered air forces, wings, groups, squadrons, and other specialized units in descending order of the Air Force hierarchy (AFDD 1, 1997:62). The above overview of how the Air Force organizes is essential in presenting a GMTF framework from which to evaluate alternatives.

There are two other doctrine documents that merit attention because of their direct correlation with the GMTF mission. The first is Joint Publication 3-07.5, *Joint Tactics, Techniques, and Procedures for Noncombatant Evacuation Operations*. In this publication, there are several organizations that have a role in Noncombatant Evacuation Operations (NEO). These organizations include the Department of State, U.S. Embassies, other U.S. agencies such as the Department of Health and Human Services, U.S. Military Commands, and Private Voluntary Organizations, Nongovernmental Organizations, and Regional and International Organizations (JP 3-07.5, 1997:II-1 to II-7). Each of these organizations, to varying degrees, interacts with the Joint Task Force to plan and execute a NEO.

The operating environment in which the JTF finds itself can be characterized along three differing levels of threat. These levels are permissive, uncertain, or hostile with permissive being the friendliest political and military environment and hostile being

the most dangerous (JP 3-07.5, 1997:I-3 to I-4). This continuum of operating environments has implications for how the GMTF organization will be structured to meet each particular contingency. In other words, the GMTF structure needs to be scalable for the size of the event and flexible if operating conditions change.

The Joint Task Force Headquarters' composition, location, and facilities will greatly impact what the staff can accomplish (JP 3-07.5, 1997:III-6). Limitations can include the distance from the actual NEO operation. If the headquarters is located in a neighboring country, space or equipment limitations may come into play. There are also political sensitivities that can arise (JP 3-07.5, 1997:III-6). All of these factors influence the decision context of the GMTF operation.

The second doctrine document that merits attention is Joint Publication 3-07.6, *Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance*. This is known in military circles as a Humanitarian Relief Operation (HUMRO). The purpose of the HUMRO or Foreign Humanitarian Assistance (FHA) is "to relieve or reduce the results of natural or manmade disasters or other endemic conditions such as human suffering, disease, or privation that might present a serious threat to life or loss of property" (JP 3-07.6, 2001:vii). "Military forces may assist with relief, dislocated civilian support (refugees, displaced or stateless persons, evacuees, and other victims of conflict or manmade or natural disaster), and security or technical assistance" (JP 3-07.6, 2001:vii). Another mission that the U.S. military may assist with is humanitarian demining training and technical education programs (JP 3-07.6, 2001:vii-viii). "Often, FHA operations are conducted simultaneously with other types of operations, such as

peace operations, nation assistance, or noncombatant evacuation operations” (JP 3-07.6, 2001:viii).

Joint Publication 3-07.6 also describes the organization of forces for a HUMRO. Specifically, it states:

JTF organization for FHA is similar to traditional military organizations with a commander, command element, and mission tailored forces. However, the nature of FHA results in combat support and combat service support forces (i.e., engineers, military police, logistics, transportation, legal, chaplain, civil-military affairs, and medical) often serving more significant roles than combat elements. (JP 3-07.6, 2001:III-1)

Therefore, there is a slightly different focus for a HUMRO than a NEO. This difference can be seen in the career fields necessary to carry out the mission, such as engineers and chaplains for a HUMRO.

Options for organizing a JTF vary. Walker (1996:37) suggests that at one extreme is a standing JTF with permanently assigned personnel and all the necessary equipment. At the other extreme is an ad hoc organization composed of readily available resources and deployed on short notice (Walker, 1996:37). Walker remarks that a “combination of a standing component with joint augmentation provides the most workable compromise between the uniformity of a standing organization and the creativity and flexibility of an ad hoc team” (1996:37). Leveraging information technology could also impact the organizational structure of any organization and should be a consideration when examining the organizational structures that fall under the JFC (Morgan, 1999:16). The next section further refines the decision context in order to employ VFT to the decision opportunity of an optimal GMTF organizational framework.

GMTF Guidance

The United States Air Force (USAF) Transformation Flight Plan (2002) describes the overall strategy for the seven Task Force CONOPS including the GMTF. In addition, broad concepts are given that describe the overall strategic objectives for each task force. The GMTF CONOPS is a specific decision frame, which is a subset of the strategic decision frame articulated in the USAF Transformation Flight Plan. Some discussion of the GMTF CONOPS is first necessary to fully apply the VFT model later in this chapter. The GMTF CONOPS has several parts to its overall mission. First, the GMTF CONOPS provides “rapid global mobility, bare basing, and base defense in support of the combatant commanders for contingency response, humanitarian relief and evacuation operations” (DAF, 2002:16). Interestingly, the bare base and base defense missions are new capabilities being added to Air Mobility Command’s rapid global mobility mission. Another component of the GMTF mission is to flow sustainment assets into theater after the initial deployment of forces (DAF, 2002:16). Third, the GMTF will also enable the “GSTF and GRTF to deploy and employ rapidly anywhere in the world at any time” (DAF, 2002:16). Therefore, the GMTF has three key missions: sustainment, force enabler, and HUMRO/NEO.

To complete the GMTF mission, unique capabilities are provided to the combatant commanders for use in base opening and the initiation of operations (Handy, 2002; AMC/DOX, 2002). These capabilities can be broken down into five general categories as shown in Table 4. When the need arises for a GMTF operation, Air Mobility Command has been tasked to assess and open contingency airbases

Table 4. GMTF Capabilities by Category

Category	Capability
Organizational	Mobile, adaptable, deployable headquarters staffs and C2 elements.
	GMTF as an enabler for other CONOPS.
Mobility Air Forces	Persistent, focused, global, rapid positioning of forces anywhere in the world – sufficient capacity to meet JCS airlift requirements and the ability to operate anywhere at anytime.
	Air refueling to extend endurance of GMTF assets – sufficient refueling capacity to support deployment and employment in challenging operating environments.
	Cargo management – global cargo monitoring as well as the ability to onload and offload cargo at austere locations.
	Combat delivery – ability to deliver personnel, equipment, and supplies in direct support of combat operations.
	Air Force Aeromedical Evacuation System – staging and moving patients in all operating environments
Special Operations Forces Support	Air refueling operations – ability to conduct air refueling during day/night operations and in adverse weather and threat areas.
	Predictive Battlespace Awareness (PBA) – capability to execute Special Operations Forces (SOF) mission and with threat avoidance and detection.
	Ground operations – improved forward arming and refueling.
Forward Mobility Presence and Force Protection	Trained, equipped, and tailorable Contingency Response Units (CRUs) – first on scene units to open austere airfields.
	Rapidly deployable teams – deployment packages to provide shelters, utilities, and infrastructure for base opening.
	Rapidly deployable force protection teams to detect, deter, and/or defeat threats to deployed forces – equip forces with sensors and equipment to detect and repulse attacks in all environments.
Command, Control, Computers and Communications Intelligence, Surveillance, and Reconnaissance Link (C4ISR)	Persistent, focused, global all-weather standoff ISR – exploit persistent, all-weather ISR assets “to appropriately task, process, exploit, and disseminate required intelligence”
	Predictive battlespace awareness – support reachback communication and integration of ISR data resulting in the ability to establish courses of action.
	Over-the-horizon secure communications – communication and data exchange in a hostile environment over long distances

(DAF, 2002:D-2 to D-4)

(Handy, 2002). Sourcing of base opening personnel is done through “the Air Expeditionary Force (AEF) libraries as enablers and these personnel will be replaced from Expeditionary Combat Support (ECS) from AEF rotations” (Handy, 2002). The AEF is a structured, capabilities-based force rotation method, which provides airmen

predictability and stability by dividing the Air Force up into ten rotational packages.

ECS is best described as the personnel and equipment to establish a base (Deptula, 2001).

How Air Mobility Command intends to employ the capabilities in Table 4 can be illustrated by examining Air Mobility Command's notional base opening sequence.

The GMTF base opening sequence consists of seven steps as shown in Table 5. The first step is airfield seizure, as required or base assessment. For operations in a non-permissive environment, the use of Army, Marine, and Special Operations Forces by airdrop may be necessary. The second step is to open the airbase. Force protection

Table 5. Airfield Opening Steps

Step No.	Step
1	Airfield Seizure/Base Assessment (non-permissive environment)
2	Open the Airbase
3	Command and Control
4	Establish the Airbase
5	Generate the Mission
6	Operate the Airbase
7	Base Opening Force Redeployment/Reconstitution

(Handy, 2002)

begins here, as well as, the initial command and control, airfield operations, and passenger and cargo handling efforts. The next step is to institute command and control. This is where airbase command would be established because non-Air Force units would have had command of the airfield because of the required airfield seizure. Transfer of command and responsibility to the senior Air Force person will then occur. The fourth step is to establish the airbase. Aerial port and 24-hour operations would occur while additional infrastructure, force protection, and communications are added. The fifth step is to generate the mission. All mission systems, operators, maintenance, mission support,

and medical personnel will be at their full potential. The next step in the sequence is to operate the airbase. Here the goal is to continue the past actions of operating while increasing capability and quality of life. The last step is to have the forces that opened the airfield redeploy while ECS forces take over the mission (Handy, 2002).

As stated in Chapter I, AMC has identified the forces that will comprise the GMTF. One organization is the Air Mobility Operations Group. It will provide most of the functionality for the GMTF operation. Specialties contained in the AMOG run the gamut from intelligence personnel to contracting specialists. Most importantly, the AMOG will provide the aerial port functionality; this makes all the cargo loading and unloading possible (AMC/DOX, 2002). Another organization to be tasked will be the 820th Security Forces Group for air base defense. These units can operate in permissive to semi-permissive threat environments. In addition, they can integrate with Special Operations and/or airfield seizure teams (AMC/DOX, 2002). Two more key units will be the Prime Base Engineer Emergency Force (BEEF) and/or RED HORSE teams. The Prime BEEF forces are responsible for obtaining electrical power, water, heating, and structures. Furthermore, they conduct runway repair. The RED HORSE unit, by contrast, is a heavy construction organization for larger projects such as airfield runways, roads, and facilities (AMC/DOX, 2002).

Objective Identification

The Task Force CONOPS outlines the strategic objectives used in framing the decision context for the more limited decision situation of the GMTF force optimization issue. As a refresher, the decision context defines the set of alternatives appropriate to

consider and the fundamental objectives make explicit the values that one cares about. From *Air Force Vision 2020* (AFV 2020, 2003), the strategic decision context is air and space dominance. Accordingly, the strategic fundamental objective is to “defend the United States and protect its interests through aerospace power” (DAF, 2003). Figure 8 illustrates the strategic decision frame for the Task Force CONOPS.

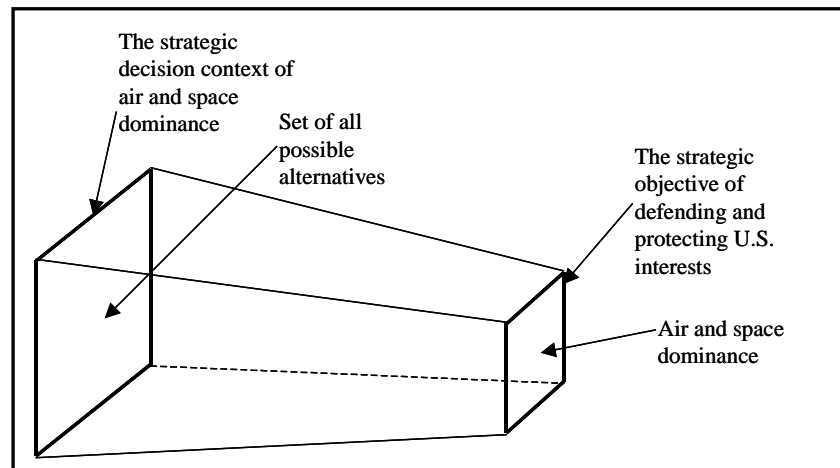


Figure 8. Task Force CONOPS Strategic Decision Frame

The GMTF decision opportunity articulated in Chapter III is a subset of the strategic decision frame of the Task Force CONOPS. It follows that the first step in the VFT process is to discover values, which follows from the identification of objectives. Utilizing Keeney’s techniques (1992) for objective identification, the initial list of objectives shown in Table 6 was generated. The list was then analyzed to separate means and fundamental objectives which get to the root of identifying the overall fundamental objectives. Then the objectives from Table 6 were structured into a fundamental

Table 6. Initial List of GMTF Objectives, Unrevised

Maximize force effectiveness	Maximize force efficiency
Maximize responsiveness to AOR	Maximize responsiveness within AOR
Maximize capability	Maximize force flexibility
Minimum footprint of force	Maximize availability of forces for tasking
Maximize interoperability of equipment	Maximize host nation support
Clarity of chain of command	Standardized procedures
Scalable command rank structure	Minimize time in contingency
Maximize mission success chances	Maximize mission completion chances
Minimize loss of lives	Maximize NGO involvement
Integrate Special Ops Forces capabilities	Integrate medical care (forward/rear)
Maximize control of forces	Maximize redeployment efficiency
Common Operating Picture of situation	Maximize robust communication

objectives hierarchy for the GMTF, resulting in a deeper understanding of what one should care about in the decision context (Keeney, 1992:69). In addition, redundant items were removed, missing objectives identified and added, and the objective levels stratified from highest to lowest. Table 7 identifies the removed objectives, and Table 8 reveals two added objectives. Figure 9 depicts the GMTF fundamental objectives hierarchy that resulted from this analysis. The highest objective, or the first tier objective, is to maximize the GMTF force structure. The other objectives are then arranged in descending order of importance from left to right, and are considered second, third, and fourth tier objectives respectively.

Table 7. Removed Objectives

Maximize capability	Maximize redeployment efficiency
Maximize host nation support	Standardized procedures
Clarity of chain of command	Maximize mission completion chances
Maximize mission success chances	Integrate Special Ops Forces capabilities
Integrate medical care (forward/rear)	Common Operating Picture of situation

Table 8. Added Objectives

Maximize responsiveness	Minimize organizational overhead
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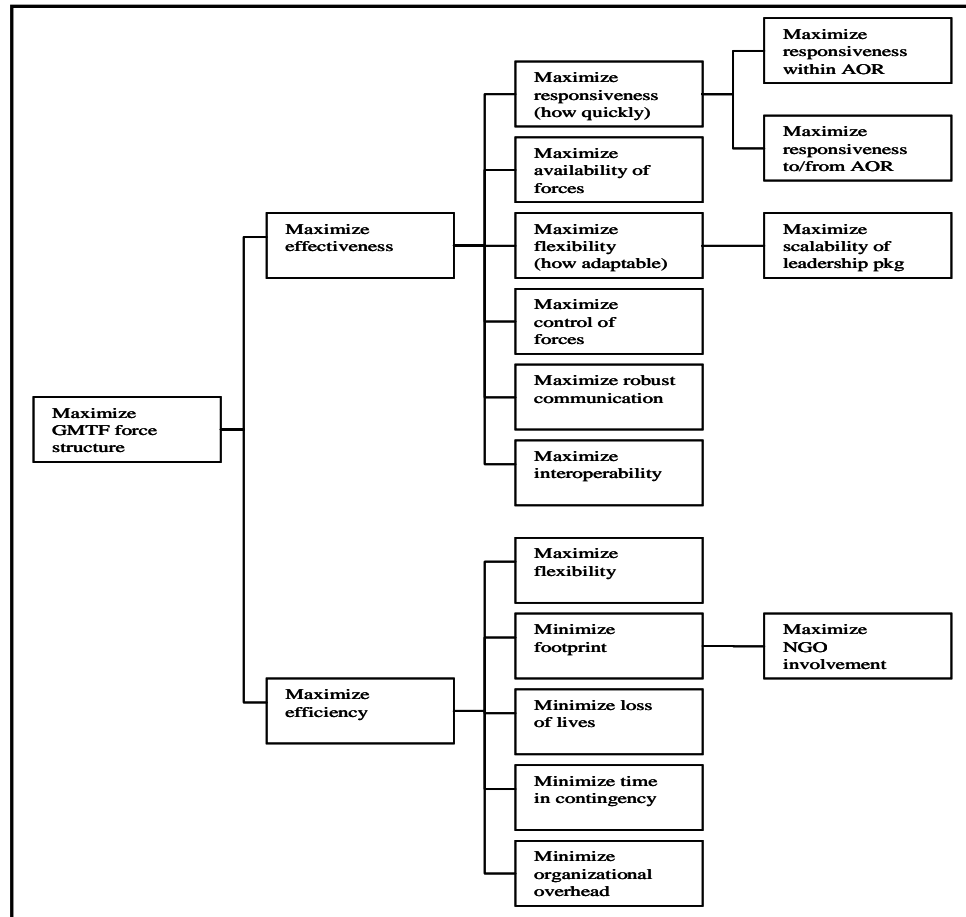


Figure 9. GMTF Fundamental Objectives Hierarchy

The values that underlie the decision context illustrate what is considered important. This research identifies the third-tier objectives in Figure 9 as the values for the GMTF force structure situation. In other words, the eight third-tier fundamental objectives consider what is important for the purpose of creating and evaluating alternatives for the GMTF decision opportunity, and they are presented in Table 9 in

tabular form. Therefore, the contents of Figure 9 and Table 9 are vital to the entire process of VFT, and in particular the next step of creating alternatives.

Table 9. GMTF Values

Maximize responsiveness	Minimize organizational overhead
Maximize availability of forces	Maximize flexibility
Maximize control of forces	Maximize robust communication
Maximize interoperability	Minimize footprint
Minimize loss of lives	Minimize time in contingency

Organizational Alternatives

The search for alternatives begins with the values in Table 9 and the overall objective to maximize the GMTF force structure. Alternatives generated for the GMTF decision opportunity utilized Keeney's techniques identified in Table 3. In particular, Keeney's techniques of removing constraints, use of objectives, and alternatives for a series of similar decisions were utilized in the creation process. In addition, varying effectiveness and efficiency focuses resulted in alternatives. These alternatives are listed in Table 10 along with a brief description of the concept, its strengths, and its weaknesses.

To fully understand the alternatives generated in Table 10, each concept is discussed in further detail except the AMC Plan, which was addressed previously in Chapter I. In addition, common themes are introduced that should permeate any organizational alternative chosen.

Table 10. GMTF Alternatives

Alternative	General Description	Strengths	Weaknesses
AMC Plan	Modular approach where forces are sourced through AEF library. AMOG, 820th Security Forces, and RED HORSE units identified for tasking.	Flexible, scalable leadership, uses existing organizations	No reduction in overhead, availability based upon AEF library
Command in Rear	Approach where contingency forces are deployed to a location; command and staff in rear at headquarters.	Flexible, minimal footprint	Reliant on information systems and communications
Single Mobility NAF	Concept where both NAFs combine into one NAF. Existing readiness mission shifts to MAJCOM and new organization concentrates on deliberate planning and exercises.	Overhead reduction, modular	Adds workload to remaining NAF, does not address deployed footprint
Mobility Response Wing	A dedicated organization composed of all key components for the GMTF mission.	Availability, scalability	No reduction in footprint, tradeoff in overhead
Risk-Based Outsourcing	Outsource low-risk mission portions of GMTF. Military retains high risk missions and unique capabilities.	Eases workload, potential cost advantages	Loss of control, contractual issues
Status Quo	This is how operations are conducted currently. There are two NAFs and two AMOGs. Forces not inherent in the AMOG are sourced through the AEF libraries.	No change	No reduction in footprint, units for GMTF mission sourced ad hoc

Command in Rear

In this approach, communication technologies are leveraged to keep the command element in the rear to minimize a forward presence and personnel footprint on the ground. The task force can execute command and control actions from its existing headquarters with a complete common operating picture of the contingency area in real time. The commander would have an integrated picture of military forces, Department of State (DOS) personnel, and other assets, like Non Governmental Organizations (NGOs), all networked so that collaboration could occur.

There are several strengths and weaknesses of this approach. One strength is a minimized forward presence, reducing exposure to a potentially hostile environment.

Other advantages include control of forces, increasing flexibility and responsiveness, and decreasing staff overhead. This is possible due to the leveraging of communication and information systems technologies. A primary weakness is that communication and information systems become critical to carrying out the mission. A robust and redundant system is needed to fully implement this alternative. Another weakness is that the technology to provide an integrated, collaborative environment with security and redundancy may be not available or cost effective. Integrating video, force position data, communication, and other pertinent information would rely heavily on space-based assets that may not be available or limited in bandwidth. Given enough priority within the Air Force for assets and funding, this option could become feasible.

Single Mobility NAF

The single NAF organization would replace both mobility NAFs. The single NAF would contain a staff that is postured to support the GMTF mission of HUMRO and NEO. Specifically, the existing NAF mission of readiness would be shifted to the MAJCOM and the new NAF staff would be focused on intelligence, plans, and operations. Sourcing of personnel for contingencies would come from the new NAF, the AMOGs, the 820th Security Forces Group, and RED HORSE units.

An advantage of the single NAF approach is the reduction of overhead, which results in economies of scale. The exact number of personnel required in the headquarters would need to be determined from further analysis. Flexibility is retained due to the modular approach of sourcing personnel. However, this concept does not directly reduce the footprint or number of forces deployed. It also adds an administrative

workload burden, such as performance reports, to the new organization due to the combining of assets once previously assigned to the existing two mobility NAFs.

Mobility Response Wing

This permanent organization would contain personnel formerly under both mobility NAFs. This approach is similar to the single NAF alternative; however, the modular approach for sourcing security forces and engineer units is replaced with an organization that has these assets permanently assigned. Another way of looking at this organization would be to pattern it after the Contingency Response Group, but with the capability to handle larger operations.

This concept would have the advantage of controlling most forces required for the GMTF mission. Functional areas that are limited in number across the Air Force would be tasked from the AEF. Other advantages are the scalability and availability of the force to meet the mission required. A disadvantage to this approach is that the deployed theater footprint issue is not addressed. Also, there may be no reduction in overhead across the organization. The NAF-level overhead would be reduced from the consolidation, but a plus up of lower level administrative staff may be required because of the additional units.

Risk-Based Outsourcing

This alternative utilizes a contractor in low-risk areas to provide certain capabilities that directly support the GMTF mission. The portion not picked up by the contractor would be performed by the military. Contractors already provide certain capabilities utilized by the military. For example, Omega Air is looking to provide air refueling for the U.S. Navy and Atlas Cargo is contracted to transport cargo for the U.S.

Air Force (Erwin, 2000; Atlas, 2003). In another vein, a contractor-based capability like a Tactical Airlift Control Element (TALCE) does not yet exist, but it is conceivable that an organization could form to provide this type of service.

The key to this approach is assessing risk and legal implications. A contractor would most likely not enter a potentially hostile area during a NEO. However, a contractor could refuel a military cargo plane in safe airspace to support a HUMRO operation; thus, freeing up military tanker aircraft for combat support missions. The advantage is increased availability and capability to the Air Force for those assets freed up by the contractor. The downside is assessing risk, which is a subjective judgment. In addition, there are many legal issues regarding contractors and required levels of service. This can be difficult, but not insurmountable. Another weakness is the loss of direct control by the organization running the GMTF operation. The contractor is not accountable to the commander of a GMTF operation. Rather, they are bound by the contract. Flexibility would need to be built into the contract to allow for changes necessitated by the operation.

Status Quo

This alternative keeps the current organizational construct of two NAFs and two AMOGs. The advantage to this approach is no reorganization. Conversely, forces required for operations like the HUMRO need to be sourced through the AEF library. This creates a piecemeal approach to building the total capability of the package, whereas AMC's approach utilizes units that provide these required forces in larger building blocks. Another disadvantage is the NAFs do not obtain a contingency mission, but maintain their readiness assessor mission both peacetime and wartime.

Common Themes

There are several common attributes that should permeate any functional structure chosen for the GMTF mission. One attribute is joint operations. The ability to coordinate, plan, and execute operations with a joint perspective is key in realizing service competencies. Joint operations also provide flexibility and more capability because of the differing service missions, but complexity can result when trying to integrate all services into a cohesive plan. Taking this concept one step further, combined operations are another alternative. Combined operations add another level of complexity above joint operations since allied and partner nation military forces are integrated into the overall operation. Another attribute for a functional structure is interoperability. Standardization of equipment can be vital to communicating with different services or government agencies. This increases the capability of the organization and creates efficiencies by reducing errors or misunderstandings. Not only should equipment be standardized, but also procedures should be standardized when differing organizations are required to work together to achieve a common goal.

Evaluation of Alternatives

Each of the alternatives generated is qualitatively evaluated on each third-tier fundamental objective identified in Table 9. In evaluating the alternatives, the Status Quo alternative was considered the baseline from which the other alternatives are compared. Thus, by default, the baseline is not shown since it is neutral. A three tier scale is used to indicate whether or not the alternative is better, the same, or worse than the Status Quo. Doctrine principles, concepts from *The USAF Transformation Flight*

Plan, other theses, and the author's experience were considered in the evaluation of alternatives, and the results are shown in Table 11.

Table 11. Qualitative Scores by Objective

Objective	AMC Plan	Command in Rear	Single Mobility NAF	Mobility Response Wing	Risk-Based Outsourcing
Responsiveness	Same	Better	Same	Same	Same
Availability	Better	Same	Better	Better	Better
Flexibility	Same	Better	Same	Better	Better
Control	Better	Better	Better	Better	Worse
Redundancy	Same	Worse	Same	Same	Same
Interoperability	Same	Same	Same	Better	Same
Footprint	Same	Better	Same	Same	Same
Loss	Same	Same	Same	Same	Same
Time	Same	Better	Same	Better	Better
Overhead	Same	Better	Better	Same	Same

In addition to the three tier evaluation, each alternative was analyzed relative to each other based on how well it attained the second tier fundamental objectives of effectiveness and efficiency. Weighting for effectiveness and efficiency is based upon the objective's relationship indicated in Figure 9 and the results in Table 11 above. For example in the AMC Plan, more weight would be placed upon effectiveness because availability and control fall under effectiveness in Figure 9 and they evaluated better than the baseline. This analysis follows similarly for the other alternatives. The graph in Figure 10 illustrates this qualitative analysis.

The results from Table 11 and Figure 10 indicate that two alternatives stand out from the rest. One alternative is Command in Rear, and it leans toward the efficiency side of the scale. Many areas in this alternative scored better than the Status Quo; however, redundancy may have to be bolstered in order to fully implement this



Figure 10. Efficiency versus Effectiveness

alternative. The other alternative that stood out was the Mobility Response Wing. This approach leans more to the effectiveness side of the scale, but it surpasses some of the other alternatives due to its comprehensive approach in integrating manpower and operations.

The other three alternatives scored equally well, but differed along a continuum of effectiveness and efficiency. The AMC plan most nearly balances the two aspects of effectiveness and efficiency. However, its main drawback was that it did not address efficiency aspects. The single NAF leans more toward the efficiency side due to the overhead reduction and the capitalization of AMC's modular approach. It still remains a viable approach. The last alternative, risk-based outsourcing, capitalized on efficiencies from outsourcing low risk missions. This freed up military forces for higher risk missions, which fits well with the military's core competencies.

Selected Alternative

Based on the qualitative analysis, the Command in Rear option had the best evaluation. However, technological challenges may need to be solved and proven first before this option can be implemented. Therefore, this alternative may be worth pursuing in the future.

Another option that faired nearly as well was the Mobility Response Wing. This alternative was more manpower intensive than the Command in Rear option, but it is

technologically feasible today to implement this option. Therefore, this option should be chosen for today's military.

Summary

The preceding discussion started with the decision context in which the GMTF finds itself. It started with the broadest organizational aspects delineated by the Goldwater-Nichols Defense Reorganization Act of 1986 and gradually narrowed to a brief discussion on HUMRO and NEO doctrine. The VFT methodology was then employed to identify values, generate alternatives, and then evaluate those ideas. Two alternatives stood out as potential organizational concepts worth pursuing for the GMTF construct. The Mobility Response Wing and the Command in Rear options show the most promise. The next chapter summarizes the results from this chapter and suggests additional areas for research.

V. Discussion

Research Results

The primary aim of this research was to recommend the optimum manner to organize forces for the Global Mobility Task Force construct. The results indicate there are two options the Air Force should consider for posturing the force structure in order to meet the GMTF mission. Today's solution would be to structure the force along the lines of a Contingency Response Group, with more added capability due to its size. This option was dubbed the Mobility Response Wing. The Mobility Response Wing adds flexibility, control, and interoperability. Sourcing of personnel would be less ad hoc than the current AMC plan since a dedicated organization would be responsible for the full spectrum of GMTF missions. In essence, this organization replaces the two mobility NAFs.

When information systems and associated infrastructure are built, the Command in Rear option should be implemented. This option leverages technology to reduce the footprint at the contingency site, thereby reducing exposure to hostile forces. Morgan in his paper advocates that leveraging information technology should be a consideration for examining structures that fall under the JFC, thereby adding credence to this alternative (Morgan, 1999:16). This option also adds control and flexibility over the Status Quo, making it an attractive choice. The Achilles heel for this option is the reliance on communication, which can be structured with added redundancy to minimize exploitation of this critical aspect.

There were two secondary research objectives for this research. The first objective was to recommend NAF role, mission, and functional structure in light of the Global Mobility Task Force construct. Based on the results of Chapter IV, the mobility NAFs should be realigned to a single Mobility Response Wing-type organization. Readiness elements within the NAF would be assumed by the MAJCOM, and a new mission of GMTF exercises and deliberate planning would be the main focus of NAFs during peacetime. Forces like the AMOGs that currently report to the NAFs would be realigned as well under the Mobility Response Wing. Consequently, the new NAF role is to provide a comprehensive capability for first response to a crisis; the new mission is to perform deliberate planning and GMTF exercises during peacetime and respond quickly during contingency situations; and the new structure is that of the Mobility Response Wing.

The second objective examined the potential for force consolidation due to the proposed organizational structure discovered in the course of this research. As a result of the Mobility Response Wing concept, the two NAFs are combined. This reduces administrative overhead and consolidates forces. Therefore, a byproduct of the generation of alternatives resulted in force consolidation.

Recommendations for Future Study

This study implemented a qualitative analysis for the list of alternatives. Keeney's (1992) VFT model provides methods for quantitative analysis, which could further expand the list of alternatives and aid in the evaluation of alternatives. Thus, one recommendation for further study is to produce a quantitative analysis using Keeney's

methodology. The results may confirm or refute the qualitative analysis performed in this research. Another recommendation is to seek out values of senior leaders to refine the list of fundamental objectives. The results from that survey could refocus the efforts produced in this paper. A third recommendation is to explore what organizational identity or identities should possess the Contingency Response Groups (CRGs). For example, the 86th Contingency Response Group reports to U.S. Air Forces Europe. The CRGs may be better suited to realign under Air Mobility Command which has extensive experience with its Air Mobility Squadrons. Conversely, the functions of an En Route Air Mobility Squadron may be better suited to fall under the air base wing at its location. The remaining personnel not absorbed into the air base wing would then be available to an Air Mobility Command CRG. Finally, a costing analysis could be performed to determine the impact of force consolidation. The evaluation of alternatives in this research largely ignored specific monetary costs. However, a cost comparison may shed new light on the evaluation of alternatives.

Summary

This research utilized Ralph Keeney's (1992) Value-Focused Thinking model, in conjunction with doctrine and other research, to qualitatively examine differing force structure options for mobility forces. The aim was to produce a force structure concept to marry up with the Global Mobility Task Force construct. This research found that an organization that is patterned after a Contingency Response Group is superior to other options. However, information technologies in the future may warrant the implementation of a command element operated from a rear area. The Command in Rear

option's main advantage is the minimal footprint in the contingency area due to the reduction of a forward command staff. These two options present an opportunity to further redefine the force structure of mobility forces, resulting in increased effectiveness and efficiencies.

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